

PREFACE

114 This medical survey and the health program connected with it was conceived by Mr. John Collier, who was Commissioner of Indian Affairs, Dr. Manuel Gamio, the Director of the Inter-American Indian Institute, and the Committees of Health and Sanitation of the National Indian Institutes of the United States and Nicaragua, and the Office of Inter-American Affairs.

121 The primary purpose of this study was to ascertain by what measure a health program could be initiated in a sequestered low-land tropical region for inhabitants who were autoctonous Indians to that area. The survey and the program were by no means complete since the main efforts were directed to the salient problems pertinent to the health of the people. Furthermore, considerable emphasis was given to the customs and habits of the Indians since any program in order to survive must be fitted into the lives of the people and the circumstances of the local situation. And, since the writer was specializing in the field of nutrition, the subject received disproportionate study.

122 The limitations of this study can be set forth. The first of these
123 was the short time spent in the Coco Basin, a period of two months hardly being sufficient for a medical survey. The second was that no specific exhaustive anthropological method was used to study the social behavior of the Indians. But this second limitation is of no great consequence since the procedures ordinarily employed have not as yet attained quantitative values. But time should have been taken to gain a further insight into the views which these Indians held with respect to medical care. So far the authors' meagre observations form the only data from which to infer conclusions; certain "single methods" were employed and it is not too sanguine to state that still more important factors in the life, as it affects Public Health of these Indians are yet to be ascertained. Without, however, anticipating future inquiries, there is presented herewith those factors, medical and social, which the investigator deemed as sufficient in quantity to allow a recommendation for the health program of the Miskito without disrupting the social values of these people.

[p.3] [p.2 has no text material]

000 The ideal procedure would have been to have had a team composed of various specialists, medical, sociological and anthropological, working together in a cooperative way in a thorough study of the Miskito Indians.

124 It must be acknowledge that we were fortunate enough to find one physician who had established himself over a period of years in the area in question. This fact made the work much easier and obviated the use of time to form contacts with Indians. This made it possible to have the work continued with a reasonable assurance of success.

000 The writer wishes to thank the members of the sponsoring committee: Dr. Clark H. Yeager, Mr. Ernest E. Maes, Dr. J. R. Murdock, Mr. Watson Davis, Mr. J. E. Johnson, Miss Sally Lucas Jean and Lt. Comdr. A. H. Leighton, M. C. USNR. He also acknowledges the guidance of his Commanding Officer, Capt. E. G. Hakansson, M. C. USN, who has had considerable experience in the study of tropical areas. One cannot but praise the unselfish devotion of Dr. David A. Thayer who has lived for many years in Central Nicaragua, and who has consecrated his career to the health of the Miskito Indians. Thanks are given also to Dr. Leonard Rosenfeld, Dr. Lorenzo Guerrero and Col. Luis Manuel DeBayle, for their generous assistance. The study, furthermore, was dependent on my associates, Mrs. Angela S. McCutcheon, Dr. Leopoldo Navarro, Dr. David Ocon, and Dr. H. Fonseca, who gave much of their time in the field survey.

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HISTORICAL BACKGROUND

175 The eastern coast of Honduras and Nicaragua was discovered by Columbus in 1502, during his fourth and last voyage to the New World, when he was proceeding from Trujillo in Honduras to Nombre de Dios in Panama. However, he did not come in direct contact with the Indians of this area.¹ In the course of the following years the Spaniards endeavoured to take possession of this territory but the natives resisted most of the efforts of the colonizers. The Spaniards were chiefly in quest of loot but since gold was not found and the Indians gave them no end to trouble they centered their interests and energies upon the Pacific Coast.

Vague mention was made of the Atlantic seaboard Indians by Gon-

¹ Conzemius, E. Ethnographical Survey of the Miskito and Sumu Indians of Honduras and Nicaragua. Smithsonian Institution, Bull. 106, 1932.

[64] disease debilitates the population, reduces the activity and energy of the workers, depresses the intelligence of the children and diminishes fecundity. Since the Miskito coast abounds in mosquitoes especially those that carry the disease, it is only reasonable that malaria constitutes a major public health problem of the area.

In the Coco Basin, most of the inhabitants are either in the throes of malaria, in a period of remission or have had the disease: the exact status being difficult to differentiate. A swelling of the spleen, anemia, fever are most commonly attributed to malaria (*Wrih*). For malarial [75] fevers the bark of certain trees are administered, particularly copalchi (*Cinchona* sp.) The stricken person is enveloped in *tunis* blankets with hot stones placed at his feet, forthwith he is often taken to the river and given a cold bath.

The high incidence of malaria is due to two reasons, the first being the large numbers of anopheline mosquitoes capable of transmitting the disease and secondly the numerous sources of host reservoirs for the parasite. Thus the infected and the infectors are numerous. The higher death rates (impression) occur among the very young and the aged. At San Carlos the death rate from malaria, between the ages of 2 to 10 years of age, is approximately 12 per cent. Most of the [165] aged, we were told, died of fever and the older people on occasion sing this chant:

[539] "*The fever returns and I shall die. I drink medicine put it on my body. The fever will kill me and I shall die. The medicine does not help me. I have been good to my family. I have had the fevers. This time it (the fever) will take me.*"

• [122] Our investigations were primarily directed to children because they, not being at work, were easier to secure and examine and it was easier to determine exactly the incidence of autochthonous malaria in each locality. Furthermore the children rarely leave the community and among them are fewer imported cases. However certain of the older people were examined and these are included in this report.

Children according to Brumpt⁸⁸ may be considered as a reservoir of the disease. If such is the case, then, San Carlos community becomes an ideal location for the preservation and increase of the disease. The possible reason for the lower incidence of malaria at Saulpaca is that within a few miles of this community Dr. David Thaeler maintains his clinic and hospital. Thaeler has furthermore been instrumental in teaching the people the principles of swamp drainage and malaria control. It would be reasonable to expect that in

⁸⁸ Brumpt, E. *Precis de Parasitologie*, 4th ed., 1927, Paris.